

Gulf of Mexico Alliance Resilience Working Group Biloxi, Mississippi – September 17-19, 2007

MEETING SUMMARY

The Gulf of Mexico Alliance Resilience Working Group held its second meeting September 17-19 in Biloxi, Mississippi. Hosted by members from Mississippi and Alabama, and held at the Mississippi Department of Marine Resources, this second meeting focused on sharing information about existing resilience activities, defining the group's mission, and beginning to identify activities the group might pursue. A reception hosted by the Northern Gulf Institute on the first evening provided an additional opportunity for members to network. Appendix A provides a list of attendees.

Monday, September 17th

The meeting began mid-day on the 17th with co-chair and host Tina Shumate welcoming attendees. Dr. Bill Walker, Director of the Mississippi Department of Marine Sources and member of the Alliance Management Team (AMT), added his welcome and reviewed the charge he delivered to the group at their first meeting.

Governors' Meeting, Next Action Plan for the Alliance

Dr. Walker also shared the outcomes of an August meeting of the Gulf Governors, Congressional members and staff, and federal agency representatives to discuss the successes of the Alliance to date and next steps. Attending Governors had expressed strong support for the Alliance, and resilience had been an explicit topic of discussion in the meeting. Dr. Walker said the AMT will be developing a new action plan outlining future goals and action items for the Alliance in the coming months, and urged the Working Group to think about items they would like to see included in this new plan.

Review of Resilience Definitions and Information Forms Submitted by Members

Following a round of introductions, co-chair Rod Emmer spoke to the group about the resilience definitions collected since the last meeting, and urged attendees to consider adopting an existing definition. He also thanked members who had submitted forms with information on existing research, projects, and activities, and said that all of the compiled information would be put into an excel file and made available via the Alliance working website. He asked participants to continue sending completed form for others.

USGS Activities in Support of Alliance Resilience Action Steps

Dr. Dawn Lavoie spoke to the group about USGS activities in the Gulf of Mexico Region. The USGS has a variety of research and mapping initiatives underway that support the resilience action items in the Governor's Action Plan. (Presentations from the meeting will be posted on the working website.)

Group Discussion: Membership Gaps

The first day closed out with a group discussion led by the co-chairs. Attendees identified a variety of additional fields and organizations that might be good to include in the working group. The following is a summarized list of these suggestions:

- More state departments of emergency management
- Insurance industry representative
- Planners from each state
- Land use attorneys
- Additional parts of USDA
- Sociologist
- Resource economist
- Chambers of commerce / business community.

There was also some initial discussion about a resilience definition and mission statement for the group, with plans to revisit these topics over the next two days.

After the meeting adjourned for the day, attendees reconvened at the Biloxi Schooner Pier for a reception hosted by the Northern Gulf Institute.

Tuesday, September 18th

Day two of the meeting focused on sharing information about existing resilience efforts in the Gulf of Mexico Region.

Mississippi & Alabama Resilience Activities

Tina Shumate, Grant Larsen, and Marcia Garcia, all of the Mississippi Department of Marine Resources, presented on resilience-related programs, projects, and experiences from Mississippi, many developed in the wake of Hurricane Katrina. They shared copies of the pattern book and community plans developed to guide recovery, as well as reports from Governor Barbour's Commission on Recovery, Rebuilding & Renewal.

Phillip Hinesley of the Alabama Department of Conservation and Natural Resources, Tina Sanchez of the South Alabama Regional Planning Commission, and Charles Williams of the Alabama Emergency Management Agency presented on resilience-related activities in Alabama. Their talk included information on regional sediment management, topographical monitoring and shoreline change analysis, a new resilience-minded planning effort in the Mobile area, and hazard mitigation and floodplain management activities.

Resiliency Index Project

After the Alabama and Mississippi representatives reviewed their state's resilience related activities, Rod Emmer, Louisiana Sea Grant and LaDon Swann, Mississippi/Alabama Sea Grant, presented a project they developed since the July 2007 Alliance meeting in St. Petersburg. Rod and LaDon elected to draft a Resiliency Index for local communities. This initiative is in direct response to Dr. Walker charge to the newly organized Resilience Working Group to take action, think regionally, and apply existing knowledge and resources to solving Gulf of Mexico problems.

An initial action of the Alliance (Governors' Action Plan For Healthy and Resilient Coasts, 2006) is "to determine how to enhance coastal communities' resilience to disaster and begin to identify a methodology for the development of a *resiliency index* (emphasis added.) The Louisiana and Mississippi/Alabama team drafted a methodology based on data and personnel readily available to communities. This Resiliency Index gives communities a quick self-assessment of their current resiliency and identifies selected potential vulnerabilities. Rod and LaDon will field test their draft by visiting Alabama, Mississippi, and Louisiana communities in the coming months. They will revise the methodology in consideration of comments received and issue a final version in 2008.

Participants were asked to provide written comments on the draft Resiliency Index to either Rod or LaDon. Limits were set for comments: 1. This is an index for communities and should not be expanded to ecosystems; 2. The index is based on existing, readily available information and data; 3. The index relies on local officials and agency personnel for completion; and 4. The index is not a test and should not be revised to look like a test. Initial feedback from attendees was very positive. The index was subsequently identified as an activity the Working Group would like to support.

Federal resilience-related activities in the region

In the afternoon, Todd Davison of NOAA's Coastal Services Center (CSC) and Galen Scott of NOAA's National Geodetic Survey (NGS) reviewed a variety of federal activities related to resilience, including efforts that support items in the Governor's Action Plan. Todd spoke briefly on each of the following activities:

- The Ocean Research Priorities Plan, which will help prioritize federal investments and which includes resilience-related research needs. The President's budget for FY08 includes funding for NOAA and USGS to support research under the "Forecasting the Response of Coastal Ecosystems to Persistent Forcing and Extreme Events" theme.
- NOAA's Coastal Storms Program (CSP), which will include a Gulf of Mexico effort in FY08-09. Based on input from area stakeholders, this effort will have a focus on outreach and education about existing data, models, and tools. SeaGrant will be heavily involved in implementation.
- Emerging community resilience pilot projects being supported by NOAA and partners such as the Mobile Chamber of Commerce, The University of New Orleans, and Texas A&M University.
- The Department of Homeland Security Southeast Regional Research Initiative, which is supporting a multi-million dollar resilience initiative that will include pilots in Memphis, TN, Charleston, SC, and Gulfport, MS.
- RiskWise, a nascent partnership effort to educate local officials about resilience concepts and tools for assessing and enhancing resilience. Partners include NOAA, Cooperative Extension's Extension Disaster Education Network, Coastal States Organization, Association of State Floodplain Managers, Institute for Business and Home Safety, American Meteorological Society, and American Planning Association.

- An inventory of Gulf of Mexico topography and bathymetry, as well as information about topobathy elevation model applications, that will be available from NOAA CSC this fall.
- \$5 million in the President's FY08 NOAA budget for Gulf of Mexico Alliance support, a portion of which might fund resilience work.

Galen augmented this list, detailing the following NGS activities:

- The Height Mod program, and in particular recent efforts to assist Gulf Coast recovery efforts by establishing new heights on 320 benchmarks throughout southeast Louisiana.
- NGS' efforts to work with the Army Corps to utilize a common datum (NAVD88) on all 12,000 miles of levees.
- Measuring subsidence, sea level rise, and storm surge via activities such as analyzing post-storm imagery and using surface elevation tables in wetland areas to measure changes in elevation and water levels.
- Supporting state geodetic advisors (currently all of the Gulf states except Alabama have an advisor), and providing training for state, local and private agencies in obtaining accurate heights

Mississippi Flood Maps & The Mississippi Coastal Improvement Program

Robert Lowe of the Federal Emergency Management Agency and Jeremy Ladart of the U.S. Army Corps of Engineers (USACE) provided the final presentations of the day, wrapping up the presentation of federal activities. Robert spoke about work underway to update flood maps for the state of Mississippi using improved modeling and informed by the impacts of Katrina. (Information about the Mississippi Coastal Mapping Project can be found online at <http://www.mscoastalmapping.com/>.) Jeremy presented on the Mississippi Coastal Improvements Program, providing an overview of the process the USACE has followed to explore options surrounding coastal protection and restoration in the six Mississippi coastal counties. He detailed the stakeholder involvement process, and provided a timeline for the USACE's final report.

Group Discussion: Definition, Potential Activities

The day ended with group discussion about a definition of resilience, and a few short-term actions the group might pursue.

Definition of Resilience

Attendees did not come to consensus on a final definition, but did identify elements of the concept that are important for the group to consider, and developed the following draft text that may evolve into a final definition:

- Resilience is the capacity of human and natural/physical systems to adapt/adjust to and recover from misfortune or change.
- Areas of special interest for the group include culture and heritage, ecological systems, economics, insurance, and smart growth.

The group agreed to revisit the issue of definition at their next meeting and/or via email or conference call dialog.

Short-term actions

While most of the discussion on possible activities and products took place the following morning, attendees did highlight a few short-term actions for the group on Tuesday:

- The group revisited the Resiliency Index Rod and LaDon are developing, and said it would make sense to support their efforts to pilot the index.
- Similarly, a number of attendees mentioned that it would be good to follow the nascent resilience pilots mentioned by NOAA, and the Coastal Storms Program efforts, and support or “tag on” to these as appropriate.
- Attendees agreed it would make sense for the group to assume the role of writing-up and sharing the results of the resilience (R-2) actions in the current Governors’ Action Plan. Tina Shumate and her staff offered to take a lead role on this activity, with support from Heidi and Galen.
- Because there had been a lot of discussion about the different disciplines and entities involved in resilience, Heidi offered to try and compile information on the relevant agencies and programs in the Gulf region. Attendees agreed it would be valuable to have an overview of the entities involved in the following areas in each state: coastal zone management, emergency management, land use planning, floodplain management, and water/stormwater planning.
- Finally, while there was not a specific action item for this, the group did express a desire to provide input to funding organizations on how to target resources effectively, perhaps by suggesting projects or criteria for funding.

Wednesday, September 19th

On the final morning, the group drafted a mission statement, reviewed the action steps in the current Governors’ Action Plan, and began to identify both short- and long-term products and activities the group might work on. Attendees also revisited operational considerations, and participants from Texas graciously agreed to host the next meeting.

Working Mission of Resilience Working Group

After a brief discussion, the group agreed to adopt the following as a working mission statement:

Coordinate and enhance efforts of local, state, federal, business and non-profit partners to assist coastal communities and ecosystems in the Gulf of Mexico region in becoming more resilient in structure and function.

Review of Action Steps in the Governors’ Action Plan (R-2 actions)

Before turning to a discussion of future activities, the working group reviewed the status of the resilience action steps in the current Governors’ Action Plan. (The table in Appendix C provides the status of the eight R-2 action steps.) The review revealed that seven of the eight action steps are “on track,” meaning that federal and state partners have made progress on the actions and are scheduled to complete them by the end of the 36-month timeline. One action – R-2.8 Coordinate, as appropriate, unified five Gulf State support for the collection of comprehensive shallow water bathymetry data (e.g., LIDAR) to support improved storm surge modeling and more accurate emergency evacuation assessments) – is not on track, and attendees agreed this action should be on the agenda for the next meeting. Participants also identified actions R-2.4 and R-2.7

as areas where the Working Group might contribute, and the draft Resiliency Index presented earlier was specifically mentioned as an effort that would contribute to R-2.7.

Discussion about Possible Products & Activities, Next Action Plan

Following the review of activities under the existing action plan, attendees turned to a discussion of future products and activities that the Working Group might pursue. At the beginning of the meeting Dr. Walker had asked attendees to begin thinking about resilience items they might recommend for the next action plan. Because this plan will be developed in the coming months, attendees agreed they should begin brainstorming a host of possible activities, and then work to refine and narrow the list at future meetings and via email communication.

Attendees took a few minutes to write down three possible activities or products, and then each person shared one of those ideas in a round-robin discussion. Appendix B provides a write-up of the ideas everyone wrote down. Some common themes did emerge as attendees shared their suggestions:

- Inventory existing information and tools, including policies, models, and educational efforts,
- Conduct outreach and education, joining/supporting existing efforts such as the Coastal Storms Program where possible,
- Ensure that tools are useful for and available to decision-makers at the local government level,
- Ensure that necessary data (e.g. topography and bathymetry) are collected,
- Support local resilience pilots, and produce case studies to share lessons,
- Work with private sector interests as well as public sector decision-makers,
- Test out the Resiliency Index presented at the meeting, and
- Bring together individuals from different disciplines involved in resilience such as planners, emergency managers, resource managers, and floodplain managers.

Next Meeting, Discussion of How to Operate

During a final afternoon session, the group discussed the following logistical items:

- Next meeting: Ralph Rayburn offered to host the next meeting, together with the support of his Texas colleagues on the group. (Attendees were polled for a preferred date, and the next meeting will be December 11-13 in Corpus Christi.)
- Dialog between meetings, Developing input for the next action plan: Attendees talked about how they might refine the initial brainstormed list of activities, and craft input to the next action plan between meetings. Sending in comments via email, participating in conference calls, and having a “WebEx” meeting wherein ideas are shared online were all suggested as possible mechanisms. (Note: Since the meeting the AMT has clarified that they would like some initial ideas from the group in time for their November meeting to discuss the next action plan, but that specific actions do not need to be provided until a later date. Ideas from this meeting will be shared with the AMT, with the explanation that these are just an initial brainstorm and need to be refined.)

- Working website: The group was reminded about the potential to use the working website's resilience page to share information (http://www2.nos.noaa.gov/gomex/coastal_resil/welcome.html.) Heidi will work with the site manager to post information from this meeting, and the excel table of existing efforts prepared by Rod Emmer will be posted as well.
- Need for a coordinator: The possible need for a full-time coordinator for the Working Group, similar to Lee Yokel's position for the education Priority Issue Team, was raised at the end of the meeting. Attendees agreed a full time coordinator would be valuable given all of the activities discussed, and in particular given the group's interest in education and outreach. Individuals suggested that such a position might be pursued via a proposal to EPA or NOAA if these agencies provide Alliance grant opportunities as anticipated. Attendees also suggested revisiting this issue at the December meeting.

Shortly before noon the co-chairs thanked attendees for their contributions and adjourned the meeting.

Appendix A

Resilience Working Group Attendees

Bill Barton	FEMA Region VI; New Orleans TRO
John Bowie	EPA Gulf of Mexico Program
Rafael Calderon	The Nature Conservancy
Todd Davison	NOAA Coastal Services Center
Michele Deshotels	Louisiana CPRA Integrated Planning Team
Quenton Dokken	Gulf of Mexico Foundation
Rod Emmer	Louisiana SeaGrant
Jay Gamble	USACE SWD
Bruce Glavovic	Massey University, New Zealand
Phillip Hinesley	Alabama State Lands (CZM)
Sharon Hodge	Northern Gulf Institute
Doug Jacobson	EPA Region 6
Steve Jones	Geological Survey of Alabama
John LaBrune	FEMA, Mitigation Section Chief, MS TRO
Jeremy Ladart	USACE, MsCIP project
Dawn Lavoie	USGS, New Orleans
Robert Lowe	FEMA
Dan Petrolia	MSU Agricultural Economics Department
Ana Puszkin-Chevlin	Florida Atlantic University
Ralph Rayburn	Texas SeaGrant
Heidi Recksiek	NOAA Coastal Services Center
Tina Sanchez	South Alabama Regional Planning Commission
Galen Scott	NOAA National Geodetic Survey
Steve Sempier	NOAA SeaGrant
Tina Shumate	Mississippi Dept. of Marine Resources
Pat Skinner	LSU AgCenter
LaDonSwann	Mississippi-Alabama SeaGrant
Carleigh Trappe	NOAA OCRM, Coastal Programs Division
Jim Weatherford	Coastal Resources Program, Texas General Land Office
Charles Williams	Alabama Emergency Management Agency
Fred Zeile	NOAA National Coastal Data Development Center

Appendix B

Brainstorm of Possible Activities and Products

Written ideas from attendees:

- Provide resources to local decision makers and emergency managers that will promote their success in dealing with coastal hazards.
- Create a higher profile for coastal hazard mitigation, preparedness, response and recovery within the Gulf States.
- Identify, quantify and monitor resiliency support initiatives within the Gulf of Mexico.
- All coastal states should, at a minimum, assume partial assumption of Sec. 404 – wetlands in their coastal zone to include strengthening of CZM/consistency, water quality, etc.
- Explore current and novel land development policies and regulation programs that foster politically and economically feasible strategic retreat and relocation from vulnerable coastlines.
- Develop education and outreach tools and programs that enhance socio-environmental literacy in young adults so they may be informed environmental stewards.
- Work with private sector interests to encourage responsible and sustainable development and resource consumption (maybe through the Urban Land Institute and the Institute for Business and Home safety.)
- Education and outreach for coastal communities on the importance of improving land use planning to enhance resilience to disasters. Include petro-chemical industry and other businesses.
- Improve coordination and communication of coastal emergency managers, floodplain managers, and county officials to integrate pro-active resiliency and mitigation measures.
- Consider removing economic incentives for developing in high-risk areas (e.g. NFIP insurance), and increase economic incentives for smart growth.
- Atlas or directory of partners or policies in each of the five Gulf States that deals with hazards or resilience (SeaGrant.)
- Continue to work with SeaGrant on Resiliency Index form and possible pilot program.
- Continue to collect resilience data forms (SeaGrant.)
- Involve local communities in Coastal Storms Program and other on-going pilots in the states (NOAA Coastal Storms Program, Mobile Resilience project, Sea Level Rise / climate change workshop in the Panhandle.)
- Better building design and construction standards.
- Knowing who the players are and ways to bring them together to better integrate/align planning (i.e. how to work within organizational/regulatory confines.)
- Tool for assessing resiliency/vulnerability and education and training to encourage its use and get it into the right people's hands. Need to transfer tools, BMPs, etc beyond city/state lines and make sure they can be adjusted as

necessary. (Many communities and states say something may have worked well there, but it's different here – even within the Gulf.)

- Case studies/success stories for becoming more resilient (BMPs, strategies, policies, etc.)
- Collect and synthesize stakeholder input throughout the Gulf States to identify coastal resiliency-related research and management needs (or synthesize input that's been collected recently), identify gaps, and begin addressing these needs via CSP and other efforts.
- Describe case studies of resilience success stories and challenges on the legal and state level (implementation of policies, tools, pilot projects – e.g. restoration of wetlands.) Also look at unsuccessful strategies where lessons can be learned.
- R-2.5 – Broaden inventory beyond coastal storms to include public and private tools, strategies, models, and outreach.
- Share what's already available locally or statewide but not on a regional level. Initiate outreach efforts to share resiliency-related and storm preparedness issues to local communities (much of this information is available and updated already in MS and LA but may not be as easily available in other states.) CSP might take a lead role.
- Integrate with other working groups.
- Collaborate with other federal, state, local, and academic institutions to develop values for ecosystem services (e.g. the monetary value of an acre of wetlands for storm mitigation.) The whole monetary value of ecosystems lost to storms, coastal development, coastal pollution, etc. is not considered in our calculations.
- Compile what federal, state, local, and academic entities are doing on resiliency.
- Encourage development/people to move north.
- Standardize and maintain topographic and bathymetric surveys through the development or implementation of a High Accuracy Reference Network (HARN) across political boundaries to promote current coastal issues and facilitate LiDAR corrections. Several different vertical and horizontal datums are being used for surveying (NAD 83, WGS 84, and State Plane.) If surveys (hydrographic or land-based), LiDAR, and orthophotos were standard using the HARN, the assimilation of data would be more rapid and provide less room for error. The HARN is needed across the coastline to facilitate survey control and promote 3rd order GPS surveys. States need the capability to perform rapid Real-Time Kinematic (RTK) surveys that "jive" with data produced by other groups. This should also benefit survey teams assessing storm surge, building elevations, ground elevations, engineered beach monitoring, etc.
- Promote the identification of natural resources needed to re-establish engineered beaches, wetlands, and other coastal features; identification should include delineated and permitted reserves.
- Expand and maintain the NOAA CSC Legislative Atlas as a guidance tool in support of resiliency to include county and municipal policies and regulations.
- Land use coverages across GoMex counties should be robust, not simplified. Use Florida scheme not Anderson [for classification.]

- Promote updating of Geographic Name Information Systems (GNIS) – most data are at least 20 years old – which supports HAZUS, recovery, potential impacts to cultural resources, tower sites, etc.
- Outreach to both the citizens and local government on the benefits and products from GOMA. Better modeling. Improvement to infrastructure. Reduction in risk.
- A one-stop location for “resilience” issues.
- Gathering of best practices.
- Promote the use of the Special Flood Hazard Area (SFHA) to measure and plan development.
- Educate developers and builders about what we know.
- Publish an annual resiliency index and promote it through the media. This will generate coverage comparing each community to the standards.
- Use the resiliency index activity as a vehicle to introduce and promote the concept to local governments and communities.
- Reach out to Project Impact communities to tap into the disaster resistance movement and gain local champions.
- Develop framework to educate stakeholders on the importance of the natural habitat to resilience.
- Most coastal land-use managers, developers, and emergency managers already use some tools or decision-support systems. We should conduct a survey of regional land-use and emergency managers to determine what tools they are already using. Conduct an evaluation of these tools/trends – are they using the best decision aids? Do we already have better tools available?
- Assemble an inventory of tools available today. (My belief is that various agencies are producing competing products to solve the same problem.) Based on the inventory, if there is duplication, encourage agencies to cooperate vs. compete. CSP may be a good model.
- Inventory/track/assist the resiliency projects/pilots underway.
- Resiliency working group orchestrate and host workshops with coastal communities across the entire Gulf region, providing counties/parishes with *helpful* tools to make their communities more resilient. Workshop would bring national leaders to discuss. Working group representatives would gather and track resiliency sheets for use in Gulf-wide database showing levels of resilience. In conjunction with Chambers of Commerce, building councils, etc. All under the banner of the Alliance. Possibly committing to an ongoing series.
- Develop fact sheets/information/tools that would be very beneficial to communities in assisting them in becoming more resilient (e.g. smart growth.)
- Create “Depth of Water – Category 5” decals and work with DOT agencies in each Gulf State to place them on existing overpass support columns, buildings, etc. in coastal counties to educate the public.
- Review federal funding sources (requirements) to identify gaps that are not currently requiring resilient features.
- Culture/heritage/history of coast and use of coast. Healthy communities and ecosystems – not just recovery.

- Identify those community functions that are tied to the coastal landscape that we can support/enhance, while also supporting ecosystem sustainability (e.g. shipbuilding, fisheries, oil and gas, agricultural crops, fresh water management areas, ports, navigation, freight transfer, recreation, tourism.)
- Bring more people to the table (e.g. National Park Service, FHWA, Minerals Management Service.)
- Add departments of emergency management, insurance industry, floodplain managers, river authorities.
- Catalogue infrastructure – especially waste-water and drinking water systems – and assess their vulnerability to events. Help to modify them to reduce impacts or move them out of harms way. Ensure there are contingency plans to provide for quick recovery.
- Do table-top demonstrations in each state for disaster response and recovery, and include hurricanes/floods, not just terrorism.
- Near-term: Revise, test, and prepare final resiliency index. Begin implementation.
- Mid-term: Identify gaps in resilience planning process within states and propose options.
- Long-term: Assure a structure and function for regional coordination and cooperation – a place that can help mediate solutions and overcome obstacles to safe living on the coast.

Appendix C

Status of Governors' Action Plan R-2 Action Steps

GULF OF MEXICO GOVERNORS' ACTION PLAN (8-16-07)

Actions (by Name)	On Track	NOT on Track	Complete	Status
R-2: COASTAL HABITAT PRIORITIES (Increase Understanding of Regional Risks of Sea Level Rise, Subsidence, & Storm Surge)				
1. Enhance the coast-wide network of elevation benchmarks, including the Continuously Operating Reference System (CORS), to deliver subsidence rates accurate to 1 millimeter per year.	X			National Geodetic Survey is installing a new Continuously Operating Reference Station (CORS) at the Nancy Foster Florida Keys Environmental Center. In addition to supplying precise real-time positioning data, the station will be co-located with a tide gage to provide crucial data for analyzing local and world-wide sea level trends. The Height Modernization project for South Louisiana is a partnership between FEMA, the Louisiana Spatial Reference Center (LSRC) at LSU, and NOAA's National Geodetic Survey (NGS). The project involves 27 parishes. 16 new CORS stations are being installed and values will be available to the public in April. In addition, elevations are being updated for approximately 230 marks across the state. For more information, see http://www.ngs.noaa.gov/heightmod/LAPProjectInfoLSPS.htm
2. Obtain information on projected relative sea level rise, subsidence, and storm vulnerability to help prioritize conservation projects, including restoration, enhancement, and acquisition.	X			USGS and NOAA have both done work that supports this action, and that information will be considered by the R2 sub-team to develop a conservation-oriented hazards assessment. TX also has an extensive coast-wide network of monitoring stations to study sea level rise, which will likely be enhanced through a CIAP initiative involving the Blucher Institute at Texas A&M Univ and TCOON. Monitoring stations have been installed for 10 years, which is not long enough to have gained meaningful data, so the RRCT recommends that these stations remain in place or be reinstated.
3. Develop and apply ecosystem models to forecast the habitat structure and succession following hurricane disturbance and changes in ecological functions and services that impact vital socioeconomic aspects of coastal systems.	X			USGS received funding to study landscape impacts from Hurricane Katrina. Research into impacts on plant communities and avian populations is underway, and should be completed within the next 12 months. A second study with the USACE will look at how changes from the storm might impact future restoration projects, and this work should be complete by the end of FY08. NOAA NESDIS has inventoried NOAA critical data sets for ecosystem assessments post-Katrina related to ecosystem modeling & issued several post-Katrina response and recovery projects. Resulting data sets will be used for ecosystem modeling efforts.

4. Develop a management tool that enhances resiliency of Gulf Coast communities to storm surge and flooding through improved data, models, tools, and methodologies for at least one pilot study area in the Gulf region, including the Pensacola, Florida, area.	X			<p>The NOAA Storm Surge Partnership Project is on track to deliver a model and decision support tools for more accurate storm surge and coastal flood forecasting in FY07. Topographic data has been collected and compiled, and transformed into common vertical datum and sent to storm surge modelers for use in ADCIRC and SLOSH models. The storm surge modelers are in the process of comparing models and determining specifications for testing different models. A draft plan has been developed that specifies the types of decision-support tools that will be developed in FY' 07 for the user community. A new water level gage has been installed at the Weeks Bay NERR. New high resolution topographic and bathymetric data has been collected for the project study area (Mobile Bay to Walton County, FL). Vertical transformation tools for the study area will be available in FY07. Ecological and societal analysis will be conducted starting in FY07 and continuing into FY08. Coastal inundation visualization techniques and methods are under development and inundation products based on ADCIRC model output from Hurricane Ivan will be developed in the 3rd quarter of FY07.</p> <p>Initial VDATUM work has been completed for the study area (Mobile Bay, AL to Walton County, FL).</p>
5. Develop an inventory of existing NOAA storm surge and other storm related products and services that includes data and observations, models, tools, and outreach and education activities over different time scales.	X			NOAA developed an on-line searchable database for Coastal Storm Program products and services available at http://www.csc.noaa.gov/csp . NOAA storm surge and other storm related products and services are being added to an existing web based storm data resources guide, available at http://www/csc/noaa/gov/storm_info , by Q3 of FY2007.
6. Inventory and integrate topographic and bathymetric data for improved storm surge and inundation modeling for one or more pilot areas in the Gulf region.	X			An inventory of high-resolution topographic and bathymetric data in the Gulf has been completed and will be available to the management community and the public via static map book.
7. Determine how to enhance coastal communities' resilience to disaster and begin to identify a methodology for the development of a resiliency index.	X			In July and December, NOAA hosted the first 2 of 3 Community Resilience Salon, bringing together national experts to explore the conceptual framework for a Community Resilience Index. Participants were from a wide range of industries: transportation, oil and gas, tourism, finance, to consulting, technology development, and insurance. National and local chamber of commerce representatives, national nonprofits, and federal agencies also participated. The Alliance Management Team has acted on a recommendation of the RRCT to create a working group of experts in community resiliency and hazard mitigation in order to further this action.
8. Coordinate, as appropriate, unified five Gulf State support for the collection of comprehensive shallow water bathymetry data (e.g., LIDAR) to support improved storm surge modeling and more accurate emergency evacuation assessments.		X		The USACE has collected LIDAR data for portions of the Gulf of Mexico. On November 29-30 an interagency meeting was held at the Joint Airborne Lidar Bathymetry Technical Center of Expertise (JALBTCX) to identify priorities for FY07 data collection. This meeting was attended by the USACE, NOAA, USGS, FEMA, and the Navy.